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Date: Thursday, September 07, 2000 1:05:34 PM

Name: Mr. Craig E. Church, Primary Examiner, Art Unit 2876

Company: Art Unit 2876 of the U.S. Patent & Trademark Office

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**COMMENTS**

Dear Mr. Church:

I have attached the draft claims for purposes of discussion only during our telephone interview today at 3 p.m.

Mark D. Giarratana  
Reg. No. 32,615

FAV-0001-000000

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To: Primary Examiner Craig E. Church, Art Unit 2876

From: Mark D. Giarratana

Re: U.S. Patent Application Serial No. 09/372,835 of Donald G. Russell

Date: September 7, 2000

In accordance with our discussion, I have set forth below the draft claims for purposes of our discussion during our telephone interview.

**In the Claims:**

Please cancel claims 1-19 and add the following new claims:

20. (New) A method of radiographic examination of tissue having anatomical detail present in the tissue, comprising the steps of:
- providing a source of x-ray radiation capable of generating radiation suitable for imaging the tissue;
- selecting a partially radiolucent, partially radiopaque marker having a radiographic density and thickness which permit the marker to both project a radiographic shadow and transmit sufficient radiation to image anatomical detail present in the tissue when the marker and the tissue are exposed to the x-ray radiation during radiographic examination, wherein the marker comprises at least one of aluminum, rubber, plastic and vinyl, the thickness of the marker is less than about 0.4 inches, and the thickness of the marker is selected based upon the density of the tissue

being examined and the energy of the radiation being applied to absorb from about 2% to about 75% of the incident radiation;

positioning the marker between the source of x-ray radiation and the tissue; and

exposing the marker and the tissue to the x-ray radiation, and generating a

radiographic image of the tissue having the shadow of the marker superimposed thereon with the anatomical detail present in the tissue clearly visible through the radiographic shadow projected by the marker.

21. (New) A method of radiographic examination as defined in claim 20, wherein the marker comprises aluminum having a thickness less than about 0.022 inches.

22. (New) A method of radiographic examination as defined in claim 21, wherein the marker comprises aluminum having a thickness of about 0.011 to about 0.022 inches.

23. (New) A method of radiographic examination as defined in claim 20, wherein the marker comprises rubber having a thickness less than about 0.4 inches.

24. (New) A method of radiographic examination as defined in claim 23, wherein the marker comprises rubber having a thickness of about 0.2 to about 0.4 inches.

25. (New) A method of radiographic examination as defined in claim 20, wherein the marker comprises plastic having a thickness less than about 0.2 inches.
26. (New) A method of radiographic examination as defined in claim 25, wherein the marker comprises plastic having a thickness of about 0.1 to about 0.2 inches.
27. (New) A method of radiographic examination as defined in claim 20, wherein the marker comprises plastic and metal and defines a thickness less than about 0.040 inches.
28. (New) A method of radiographic examination as defined in claim 27, wherein the marker comprises plastic and metal and defines a thickness of about 0.015 to about 0.040 inches.
29. (New) A method of radiographic examination as defined in claim 27, wherein the marker comprises plastic impregnated with metal.
30. (New) A method of radiographic examination as defined in claim 20, wherein the marker comprises vinyl having a thickness less than about 1 mm.
31. (New) A method of radiographic examination as defined in claim 30, wherein the marker comprises vinyl having a thickness of about 0.75 mm to about 1 mm

32. (New) A method of radiographic examination as defined in claim 20, wherein the radiographic examination is a mammographic examination and the tissue examined is breast tissue.
33. (New) A method of mammographic examination as defined in claim 32, wherein the energy of the source of radiation is selected to be within the range of about 20kV to about 40kV.
34. (New) A method of radiographic examination as defined in claim 20, wherein the tissue defines a density approximately equal to at least one of a skull, spine and chest, and the energy of the source of radiation is selected to be within the range of about 70kV to about 120kV.
35. (New) A method of mammographic examination as defined in claim 32, wherein the marker is positioned on the patient's breast.
36. (New) A method of radiographic examination of tissue having anatomical detail present in the tissue, comprising the steps of:  
providing a source of x-ray radiation having a predetermined energy level capable of generating radiation suitable for imaging a predetermined tissue density;  
providing a partially radiolucent, partially radiopaque marker having a radiographic density and thickness which permit the marker to both project a radiographic shadow and transmit sufficient radiation to image anatomical detail present in tissue

having the predetermined tissue density when the marker and the tissue are exposed to the predetermined level of x-ray radiation during radiographic examination, said providing step including selecting the density and thickness of the marker based on the predetermined tissue density and the predetermined energy level of the radiation provided to absorb from about 2% to about 75% of the incident radiation;

positioning the marker between the source of x-ray radiation and the tissue having the predetermined tissue density; and

exposing the marker and the tissue to the x-ray radiation at the predetermined energy level, and generating a radiographic image of the tissue having the shadow of the marker superimposed thereon with the anatomical detail present in the tissue clearly visible through the radiographic shadow projected by the marker.

37. (New) A method of radiographic examination as defined in claim 36, wherein the marker is constructed of at least one of aluminum, rubber, plastic and vinyl, and the thickness of the marker is less than about 0.4 inches.

38. (New) A method of radiographic examination as defined in claim 36, wherein the radiographic examination is a mammographic examination, the tissue is breast tissue having a density approximately equal to that of water, the predetermined energy level of the source of x-ray radiation is within the range of about 20kV to about 40kV, and the marker is positioned on a patient's breast.

39. (New) A method of radiographic examination as defined in claim 36, wherein the marker is selected from the group including: (i) a marker comprising rubber having a thickness of less than about 0.4 inches; (ii) a marker comprising plastic having a thickness of less than about 0.2 inches; (iii) a marker comprising vinyl having a thickness of less than about 1 mm; and (iv) a marker comprising aluminum having a thickness of less than about 0.022 inches.

40. (New) A method of radiographic examination as defined in claim 39, wherein the predetermined tissue density is approximately equal to that of water, and the predetermined energy level of the source of x-ray radiation is within the range of about 20kV to about 40kV.

41. (New) A method of radiographic examination as defined in claim 36, further comprising the step of providing a plurality of different markers, each of the different markers defining a respective radiographic density and thickness different than the other markers and corresponding to a respective tissue density.

42. (New) A method of radiographic examination as defined in claim 41, wherein a first marker defines a radiographic density and thickness corresponding to soft tissue having a density approximately equal to that of water; a second marker defines a radiographic density and thickness corresponding to an intermediate density tissue having a density approximately equal to the density of the bones of a patient's extremities; and a third marker defines a radiographic density and

thickness corresponding to a very dense tissue having a density approximately equal to the density of at least one of a skull, spine or chest of a patient.

43. (New) A marker for radiographic examination of tissue having anatomical detail present in the tissue, wherein a source of x-ray radiation is provided for generating radiation at a predetermined energy level suitable for imaging tissue having a predetermined tissue density, the marker is positioned between the source of x-ray radiation and the tissue, and the marker and tissue type are exposed to the x-ray radiation at the predetermined energy level to generate a radiographic image of the tissue having the shadow of the marker superimposed thereon, the marker comprising:

a first outer surface for contacting a patient's skin; a second outer surface located on an opposite side of the marker relative to the first outer surface; and at least one partially radiolucent, partially radiopaque material formed therebetween, said at least one partially radiolucent, partially radiopaque material defining a density and thickness based on the predetermined tissue density and the predetermined energy level of the radiation provided which absorbs from about 2% to about 75% of the incident radiation and, in turn, generates a radiographic image of the tissue having the shadow of the marker superimposed thereon with the anatomical detail present in the tissue clearly visible through the radiographic shadow projected by the marker.



44. (New) A radiographic marker as defined in claim 43, wherein the partially radiopaque, partially radiolucent material is selected from the group including: (i) rubber having a thickness of less than about 0.4 inches; (ii) plastic having a thickness of less than about 0.2 inches; (iii) vinyl having a thickness of less than about 1 mm; and (iv) aluminum having a thickness of less than about 0.022 inches.
45. (New) A radiographic marker as defined in claim 43, wherein the partially radiopaque, partially radiolucent material is selected from the group including: (i) rubber having a thickness within the range of 0.2 to about 0.4 inches; (ii) plastic having a thickness within the range of about 0.1 to about 0.2 inches; (iii) vinyl having a thickness within the range of about 0.75 mm about 1 mm; and (iv) aluminum having a thickness within the range of about 0.011 to about 0.022 inches.
46. (New) A plurality of radiographic markers as defined in claim 43, wherein each of the plurality of markers defines a respective radiographic density and thickness different than the other markers and corresponds to a respective tissue density, and including (i) a first marker defining a radiographic density and thickness corresponding to soft tissue having a density approximately equal to that of water; (ii) a second marker defining a radiographic density and thickness corresponding to an intermediate density tissue having a density approximately equal to the density of the bones of a patient's extremities; and (iii) a third marker defining a radiographic density and thickness corresponding to a very dense tissue having a

density approximately equal to the density of at least one of a skull, spine or chest of a patient.

47. (New) A radiographic marker as defined in claim 43, wherein the partially radiopaque, partially radiolucent material includes metal and plastic having an overall thickness of about 0.040 inches.

48. (New) A radiographic marker as defined in claim 47, wherein the partially radiopaque, partially radiolucent material includes metal and plastic having an overall thickness of about 0.015 to about 0.040 inches.

49. (New) A radiographic marker as defined in claim 47, wherein the plastic is impregnated with the metal.